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Amendments To The Claims

The listing of claims will replace all prior versions and listings of claims in the application. The listing of claims present each claim with its respective status shown in parentheses. Only those claims being amended herein show their changes in highlighted form, i.e., insertions appear as underlined text (e.g., insertions) while deletions appear as strikethrough text (e.g., ~~deletions~~) or double-bracketed text (e.g., [[deletions]]). All original claims and previously presented claims appear as clean text.

In the following list, Claim 1 is amended, Claims 4 and 5 are canceled without prejudice or disclaimer, and Claims 6-14 are added.

1. (Currently Amended) A method of manufacturing ~~non-agglomerate and smaller nanoparticles at higher concentrations than a conventional flame method~~ fine particles, comprising the steps of:

supplying ~~particle-forming~~ reactants into a flame ~~formed in~~ produced by a burner;

generating particle nuclei by reactions of ~~from~~ the reactants~~, which from aggregates by colliding with each other~~ in the flame;

forming aggregates including said particle nuclei by a collision and combination of said particle nuclei with each other in said flame;~~ and~~

irradiating at least one laser beam into ~~gas-borne~~ said aggregates ~~in the flame so that temperature of the aggregates rapidly increases and the aggregates are sintered into non-agglomerate nanoparticles having smaller collision cross sections which finally cause the synthesis of non-agglomerate and smaller nanoparticles at higher concentrations~~ so that said aggregates are fused, to thereby reduce a size of said aggregates into smaller fine particles; and

growing said fine particles;

wherein said laser beam is irradiated into the flame where said aggregates start being formed, in a direction perpendicular to a direction in which said aggregates move.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (New) The method according to claim 1, wherein the laser beam is cross-irradiated into the area of the flame where said aggregates start being formed, by installing at least one mirror.

7. (New) The method according to claim 1, wherein a wavelength of the laser beam is the same as a main absorption wavelength band of the aggregates.

8. (New) The method according to claim 1, further comprising a step of irradiating at least one laser beam into one of an area of the flame where said particle nuclei start being produced and an area of the flame where said particle nuclei are not yet produced.

9. (New) The method according to claim 1, wherein the fine particles are spherical.

10. (New) The method according to claim 1, wherein collision cross sections of said aggregates are greater than collision cross sections of the fine particles produced from said aggregates.

11. (New) The method according to claim 1, further comprising a step of controlling a phase of the fine particles by controlling a power of the laser beam.

12. (New) A method of manufacturing nanoparticles comprising:

supplying reactants into a flame produced by a burner;

generating particle nuclei by reactions of the reactants in the flame;

forming aggregates including pluralities of said particle nuclei by collision and combination of said pluralities of said particle nuclei with each other in said flame; and

irradiating at least one laser beam onto said aggregates in the flame at a position below the top of the flame so as to fuse said aggregates in the flame, and such that the aggregates flow past of the laser beam and continue to collide with at least one of other aggregates and particle nuclei in the flame after leaving the laser beam.

13. (New) The method according to Claim 12 additionally comprising collecting the aggregates onto a member above the flame.

14. (New) The method according to Claim 13, wherein the step of irradiating comprises directing the laser such that the laser beam does not intersect the position at which said aggregates collect on the member.